

# 25 YEARS OF EDUCATION OF CIVIL ENGINEERS FOR GEODESY AND SURVEYING IN HUNGARY

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In this country, civil engineering education for geodesy and surveying was launched Autumn 1949, hence end of the academic year 1973/1974 marks a 25-year jubilee.

After the liberation, as soon as the worst problems of the reconstruction were solved or in the way of solution, our Party and Government agreed to establish a Faculty of Civil Engineering in Geodesy and Surveying in Sopron. It was namely recognized that with the tremendous development of geodesy as a discipline, with the increasing importance of its practice from national economy aspects, the expanding and growing requirements made education of special engineers for geodesy and surveying in this country a must, to provide them with knowledge in geodesy by far exceeding in volume, in range and in depth the discipline "surveying" delivered to them at technical universities, to give them a much deeper insight into the science of geodesy, an increased practical expertise to enable them forwarding theoretical and practical development of geodesy, and to impart them knowledge so as to equal highly educated geodesists abroad.

Even looking farther back when requirements for geodesy and surveying were by far lower than now, this country cannot be stated to have been lagging in geodesic education behind other countries with otherwise higher education standard. By 1763 a *Collegium Oeconomicum* had been established in Szenc, where within the frames of geometry, fundamentals of surveying and mapping have been lectured on, surveying exercises done, and maps were made. About simultaneously with the Szenc college, the *Selmec mining school* had been established, raised to high-school degree in 1770, and also accommodating surveying education.

1782 saw the establishment of the *Institutum Geometricum Hydrotechnicum* at the *University of Buda*. (Surveying was here delivered by JÓZSEF PETZELT, the first author of a textbook on surveying in Hungarian.) By 1850, this Institute was melted with *Joseph Technical School* reorganized in 1857 to polytechnic to deliver engineering education in five-year courses. The polytechnic and later the university issued surveyor's diplomas in the period from 1868 to 1880.

Among the listed institutions, the *Faculty of Mining Engineering* seems to have delivered the top-level surveying education by offering knowledge in addition to surveying, also in particulars of adjusting and mine surveying (ancestor of engineering surveying) and even in control surveying.

Although no school-borne education, a two-year course may be mentioned, offering specific knowledge to engineers at competent offices (departments, institutions) taking part at control surveying work of State Surveying — no such knowledge being imparted at universities.

Apparently, our previous academic education was routine work oriented in surveying, higher-grade theoretical geodesy being of little concern. This latter had only been cultivated by a few devotional professionalists, rather individually. Requirements of the inter-war period were about met by this form of education, but professionals were scarcely in the highlight of international geodesy.

As stated previously, the post-war revival much increased requirements for geodesy and surveying, inducing to organize the *Faculty of Surveying Engineering in Sopron*. Originally it consisted of two sections: surveying and geophysics. (The latter will not be treated here, it being transferred to the *Technical University of Heavy Industry, Miskolc*, together with the *Faculty of Mining Engineering*.)

First dean of the Faculty, Prof. JÁNOS SÉBOR, headed the *Surveying Department* at the *Faculty of Forestry Engineering*, bearing the responsibility combined with organizatory work for a long period. He must be thought of with much gratitude and deep respect for his enormous work done passionately, undefatigably, with sincere devotion to geodesy and surveying.

Fundamentals and some priming subjects were delivered by departments of the *Faculties of Mining* and of *Forestry Engineering*, surveying being imparted by Prof. JÁNOS SÉBOR. Again, Prof. ANTAL TÁRCZY-HORNOCH, head of the *Department of Geodesy and Mine Surveying* of the *Faculty of Mining Engineering* should be acknowledged for his strenuous efforts to urge and encourage establishment of the Faculty.

In Sopron, he delivered adjustments, underground measurements, and the already comprehensive geodesy. During the second semester of academic year 1950/1951, Author was invited as a lecturer at this Faculty. By Autumn 1951, first department of the surveying section, that of *Applied Geodesy*, was founded, with LÁSZLÓ SZALONTAI and GYULA SZÁDECZKY-KARDOSS, as the first two appointed professors of the section, and Author as invited lecturer. As head of the Department, JÁNOS SÉBOR was appointed until Author was promoted to professor (late 1952). Seven subjects have been lectured on in Sopron, the most important being mathematical cartography, geodetic astronomy and land surveying.

Soon, the *Department of Photogrammetry* has been established, also headed

by JÁNOS SÉBOR. Photogrammetry has been delivered by GÉZA HANKÓ as invited lecturer, and so have been topography and cartography by EMIL KUNOVSKY. Of course, also other invited lecturers acted at this Faculty. The two named above have been mentioned because they have the special merit of having laid the foundations of the quoted priming subjects for years and delivered it during many years, first in Sopron, and later in Budapest.

Initial activity of the two new departments was characterized by low attendance, poor equipment, and the very short time, — a few weeks — available for composing the subject matter, or for writing text-books.

Meanwhile, appartenance of the three Faculties in Sopron (those of Mining Engineering, of Forestry and of Surveying) became uncertain. Namely, the *Technical University, Budapest*, has been divided in two already in 1952, to the part keeping the original denomination (BME) and the *Technical University of Building*. The Faculties in Sopron left alone after reorganization continued to act as *Technical University Faculties in Sopron*.

By 1955, first two courses of the *Faculties of Mining Engineering and Surveying Engineering* have been transferred to the *Technical University of Heavy Industry, Miskolc*. Here surveying and adjustments had been delivered by Prof. BÉLA MILASOVSKY. However good the teachers our students committed to were, this disposition cannot be considered a successful one, since dividing the students hampered a uniform teaching system.

Status of these two faculties normalized by 1959 when the entire *Faculty of Mining Engineering* including the section of geophysics has been transferred to Miskolc, while the section of surveying engineering got to Budapest, to the *Technical University of Building and Transport Engineering*. Transfer of the surveying engineering education to Budapest can largely be attributed to Prof. KORNÉL RADOS, then rector of the University. Being low in number compared to the big faculties, it seemed us better to renounce of faculty independence and join the *Faculty of Civil Engineering* as section of geodesy and surveying. Geodesic subjects have been delivered by three departments, viz.: *Department of Surveying*, (headed first by ISTVÁN RÉDEY, and after his decease in Autumn 1968 by FERENC SÁRKÖZY), *Department of Geodesy II* soon reorganized as *Department of Higher Geodesy* (headed first by ISTVÁN HAZAY, then, after he completed his 70 years, by PÉTER BIRÓ) and the *Department of Photogrammetry* (headed by LAJOS HOMORÓDI). To cope with the development exigencies and with the circumstances, the curricula have been modified (new subjects introduced, some pre-existent subjects restricted, some subject matters updated).

By 1967, the two universities became re-united under the denomination *Technical University, Budapest*. Since 1972, the three geodesy and surveying departments constitute the *Institute of Geodesy and Surveying* under the directorship of LAJOS HOMORÓDI.

It belongs to surveying engineering education that the mapping section of the *Faculty of Military Engineering* established in 1951 at the *Technical University, Budapest* also issued surveying engineers, each course nine in number, being in total three courses. The section was headed by ISTVÁN RÉDEY.

During these 25 years, 671 students graduated as engineers for geodesy and surveying (including those from the last mentioned section), among them 184 correspondence students.

In 1966/67 and in 1971/72 two-year specialist surveying engineering courses have been organized to issue 44 specialist engineering diplomas.

Among the geodesy and surveying engineering graduates and specialist engineers, 29 acquired the degree Dr. Techn., seven of our graduates were granted the C. Sc. degree and one the Dr. Sc. degree by the *Hungarian Academy of Sciences*.

When the section of surveying engineering was launched, its departments were poorly equipped, while actually the situation is next to adequate. The development also appears from the high number of textbooks and notebooks of geodesy character. I feel our entire staff did its difficult work of teaching and education fullhearted, with a vocational faith, worth of gratitude and appreciation.

For the sake of completeness let us mention here that also other forms of surveying education underwent significant development. In 1959, a two-year surveying technician education was launched in *Székesfehérvár*, with maturity examination as basic requirement. By 1962, it was reorganized as higher technical school of surveying, becoming 1973 *College Faculty* of the *University of Forestry and Wood Industry* to educate surveying engineers of production. Actually, there are five secondary schools of surveying in this country.

The post-war recognition of the utility and even necessity of geodesy and surveying for the national economy was a happy event resulting in final account in the possibility — in addition to the multistage, systematic delivery of theoretical and practical knowledge — to scientific development. Let the Hungarian education of geodesists and surveyors at any grade and so at university grade permanently be in line with the international development of theory and practice of our profession, and contribute to this development to the benefit of our national economy, the Hungarian and international geodesy.

Be shortcomings of this paper — that is only a remembrance rather than the history of the first quarter of a century of surveying engineering education in Hungary -- be excused to a veteran of geodesy and of geodesic education.

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